MITSUBISHI ELECTRIC

Changes for the Better

for a greener tomorrow eco Changes

Quality in Motion

PASSENGER ELEVATOR MODERNIZATION (HIGH-SPEED CUSTOM-TYPE)

NexWay

MODERNIZATION

Principle

Based on our policy, “Quality in Motion”,
we provide elevators and escalators that will
satisfy our customers with high levels of
comfort, efficiency, ecology and safety.

Efficiency

Comfort

Quality in Motion

Ecology

Safety

Mitsubishi Electric elevators, escalators and building management systems are always evolving, helping achieve our goal of being the No.1 brand in quality.
In order to satisfy customers in all aspects of comfort, efficiency and safety while realizing a sustainable society, quality must be of the highest level in all products and business activities, while priority is place on consideration for the environment.
As the times change, Mitsubishi Electric promises to utilize the collective strengths of its advanced and environmental technologies to offer its customers safe and reliable products while contributing to society.

We strive to be green in all of our business activities.

We take every action to reduce environmental burden during each process of our elevators’ and escalators’ lifecycle.

Mitsubishi Electric’s green technologies have been developed as part of its long and profound commitment to energy-saving.

Milestones of Energy-Saving Technologies in Elevator Development

	1970	1980	1990	2000	2010
Motor	DC Motor		Induction Motor	Permanent Magnet Motor	
Traction Machine	Gearless		Helical Geared	Gearless	
Motor Drive	Ward Leonard	Thyristor Control	VVVF*1 Control		
Control Circuit	Relay		Microcomputer		
Power Consumption	100%	95%	72%	62%	57%
CO_2 Emissions*2 (kg/year)				54%	4550

*1 : Variable Voltage, Variable Frequency
*2 : CO_2 emissions in this table are from elevator operation and do not include emissions from manufacturing, transportation and other processes.
[Calculation conditions]
Number of persons :17, Rated speed : 150m/min., Rated capacity : 1150kg
Coefficient : the power consumption with coefficient of 0.6kg/kWh.
The CO_2 emissions values in this table vary according to conditions.

Mitsubishi Electric has been focusing on energy-saving technologies for many years. The regenerative converter is a good example. It reuses power in previous systems by transmitting the power generated during traction machine operation back to the distribution transformer. The power is then fed into the electrical network in the building along with electricity from the power supply. Since incorporating regenerative converters in the 1980s, they have contributed to significant reductions in power consumption.

It is Time to Update Your Elevators

Elevator modernization brings you a smooth ride, better traffic flow and more amenities.

Utilize our world-leading technologies to optimize the performance and functionality of your elevators.

Advantages of NexWay Modernization

Earth Conscious

- Reduction of power consumption
- Efficient use of reusable parts

Page 5

Safety

- Higher safety with Door Load Detector feature (option)

Page 5

Comfort

- Reduction of failure
- Better riding comfort

Page 6

Efficiency

- Reduction of passenger waiting time

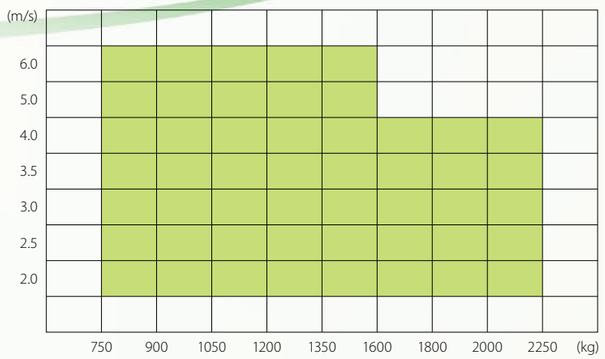
Pages 7 & 8

Sophisticated Designs

- A wide variety of designs

Pages 9 to 16

Application



Advanced Technologies

Earth Conscious

VVVF Inverter Control

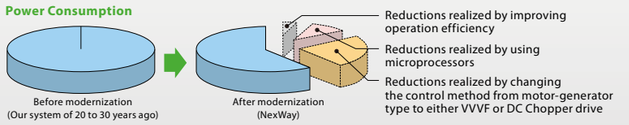
Mitsubishi Electric is the world's first company to develop VVVF Inverter Control technology for elevators. It not only delivers smooth control of the traction machine, but its regenerative system significantly conserves energy.

PM* Gearless Traction Machine

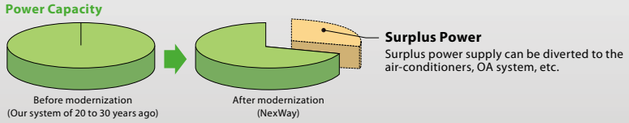
Our unique motor stator core technology, Joint-Lapped Core, has dramatically reduced not only the size of traction machines but also energy consumption.

*PM : Permanent Magnet

- **40% reduction in power consumption**


Power Consumption
Reductions realized by improving operation efficiency
Reductions realized by using microprocessors
Reductions realized by changing the control method from motor-generator type to either VVVF or DC Chopper drive
Before modernization
(Our system of 20 to 30 years ago)
After modernization
(NexWay)

- **30% reduction in power capacity**


Power Capacity
Surplus Power
Surplus power supply can be diverted to the air-conditioners, OA system, etc.
Before modernization
(Our system of 20 to 30 years ago)
After modernization
(NexWay)

Safety

Advanced Door Controls

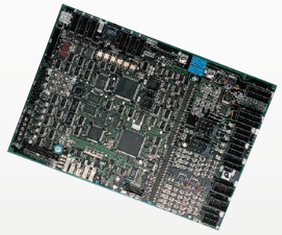
Our innovative door operation system employs a highly efficient "one-chip RISC microcomputer" which detects minor variations in the door load on each floor, the strength of the wind, and even sediment in the sill grooves. It adjusts the door open and close speeds, as well as the door motor torque as needed, for each floor using the Auto-Tuning function.

Note : Not applicable to some plans.

Comfort

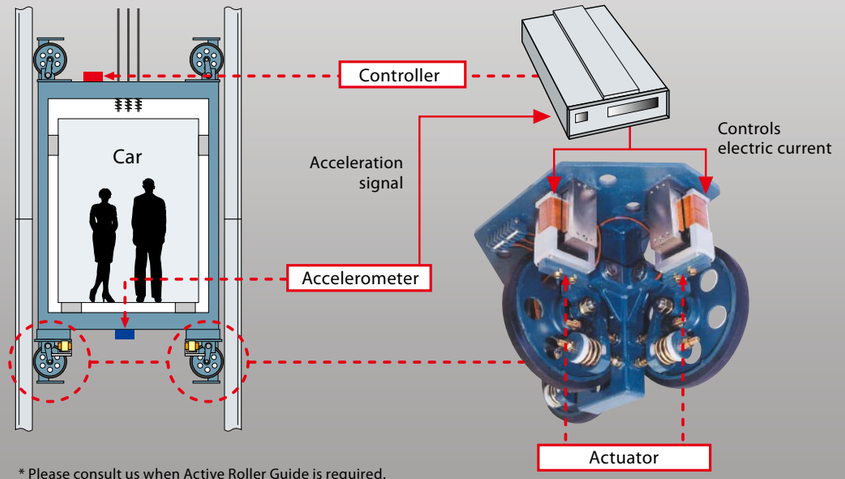
High-Speed Computer Processor

The introduction of high-density, integrated LSI digital control circuitry resulted in a significant increase in computer processing speed, enabling precise control of the traction motor for acceleration and deceleration. This innovation delivers a quality ride with minimal noise and vibration. The adoption of a low-noise IGBT with faster switching speeds also contributes to further noise reduction.



Active Roller Guide (Optional)*

The amount of lateral vibration generated by high-speed elevator cars is tremendous. A world's first innovation in the industry, Mitsubishi Electric's Active Roller Guide technology reduces the vibration by approximately 50%. It works via an accelerometer that detects car vibration during operation, along with actuators that cancel the vibration through a controlled electromagnetic force. Mitsubishi Electric Active Roller Guides ensure a more comfortable ride than elevators employing conventional roller guides.



* Please consult us when Active Roller Guide is required.

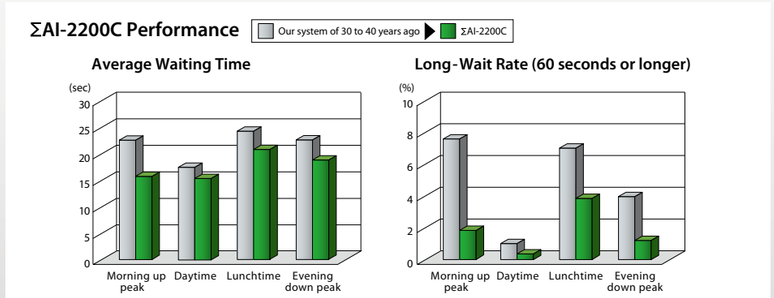
Advanced Technologies

Efficiency

AI Neural Networks

Our breakthrough AI Neural Network technology enhances transport efficiency and reduces passenger waiting time through optimum car allocation, which allows elevators to use energy effectively.

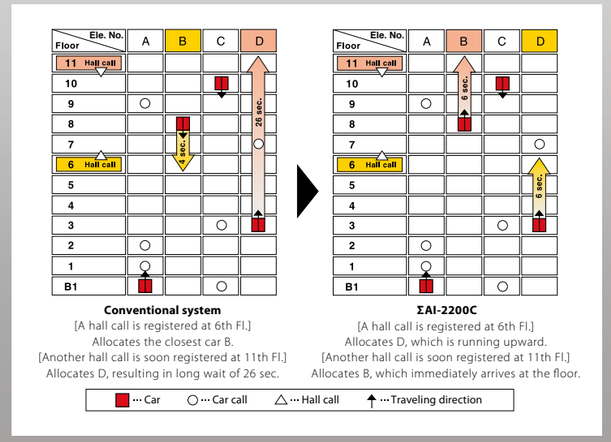
- **ΣAI-2200C group control system provides approx. 20% reduction in waiting time.**



Note: Simulated with 6 cars, 20 persons each at 2.5m/sec. for 15 stops.

Cooperative Optimization Assignment

Group control system forecasts a near-future hall call to reduce long waits.



Dynamic Rule-Set Optimizer

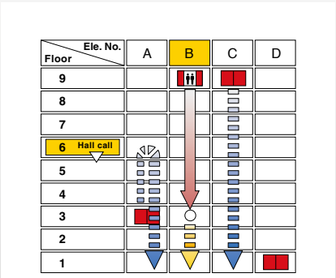
Based on real traffic data, passenger traffic is predicted every few minutes. According to the prediction, real-time simulation selects the best Rule-Set (multiple rules have been set as car allocation patterns), which optimizes transport efficiency.

Energy-Saving Operation — Allocation Control

This system selects the elevator in a group that best balances operational efficiency and energy consumption. Priority is given to operational efficiency during peak hours and energy efficiency during non-peak hours.

Car allocation that maximizes operational efficiency does not necessarily translate to energy efficiency. A car uses energy efficiently when it travels down with a heavy load, or up with a light load. Accordingly, if multiple cars have the same traveling distance, this system chooses the car that requires the least energy.

Through a maximum 10% reduction in energy consumption compared to our conventional system, this system allows building owners to cut energy costs without sacrificing passenger convenience.



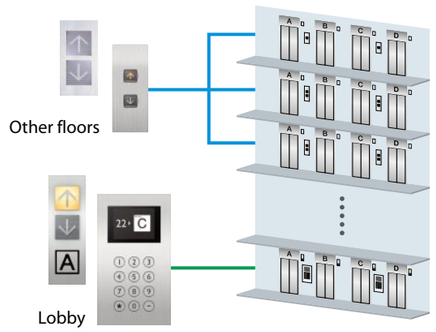
Initial conditions: non-peak period
Car A: Parked at the 3rd floor
Car B: About to leave the 9th floor with several passengers
Car C: Parked at the 9th floor.
Car D: Parked at the 1st floor
Under the conditions above, when a hall call is registered at the 6th floor to go to the 1st floor, waiting time and traveling distance will be the same regardless of whether car A, B or C responds to the call.
In response to the call, the cars will operate in the following ways:
Car A will travel up with no passengers and then down with only one passenger (requires more energy than car B).
Car B will travel down with more passengers than car A (requires the least energy).
Car C will travel down with no passengers and then down with only one passenger (requires the most energy).
Car selection
During non-peak hours when energy efficiency is prioritized, car B is selected.

Destination Oriented Allocation System (DOAS) (Optional)

The Destination Oriented Allocation System allocates passengers to cars depending on destination floors.

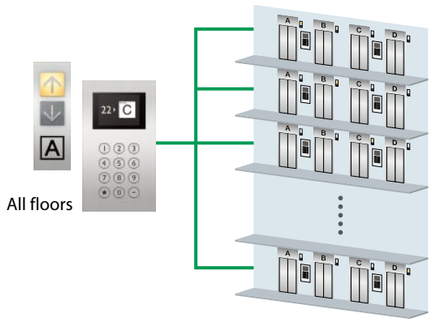
DOAS (Lobby floor(s))
DOAS hall operating panels are installed only on the busy floor(s) such as the lobby while other floors have conventional hall fixtures. This is particularly beneficial to improve the traffic flow leaving from the busy floor. It is especially useful in buildings with heavy up-peak traffic.

Example of hall arrangement



DOAS (All floors)
DOAS hall operating panels are installed on all floors. Cars receive destination information from all floors to provide the best service for more complex traffic conditions throughout the day.

Example of hall arrangement



Please consult our local agents for DOAS (all floors).

The features introduced on these pages are applicable to ΣAI-2200C only. Please refer to page 19 and 20.

Sophisticated Designs

A wide variety of sophisticated designs are available to meet your requests.
Our latest designs will give passengers an attractive new ride.

Car Designs

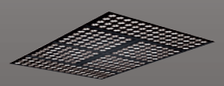
CBE-C251

LCD Position Indicator
Various graphic indication patterns increase visibility.

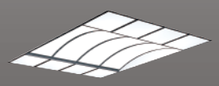
Normal operation

Emergency operation

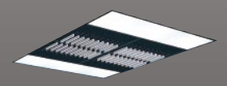
Ceilings



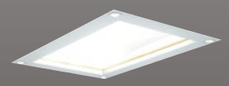
N110



N100

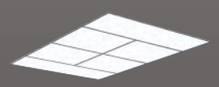


N90

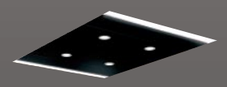


N80

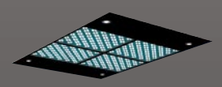
N70



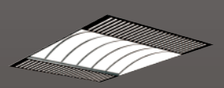
N60



N50

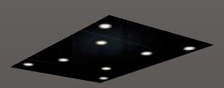


N40



N30

N20



N10

S10

For details of designs and other options, refer to the NexWay brochure.

Hall Designs

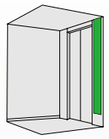
E-302

E-312

Actual colors may differ slightly from those shown.

Car Signal Fixtures

Car Operating Panel (For front return panel)



CBE-C240

CBF-C240

CBV-C240

CBJ-C240

CBE-C251
(LCD indicator)

CBH-C240

CBVF-C255
Keypad type
(LCD indicator)

CBN-E240

CBD-E240

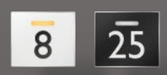
Tactile button
(Plastic)

Flat button *1
(Plastic)

Tactile button *1
(Stainless steel matte)

Flat button *1
(Plastic)

Tactile button *2
(Plastic)



Flat button *1
(Plastic)

Number: Flat button *3
Star: Tactile button
(Stainless-steel matte)

Push button *1
(Plastic)

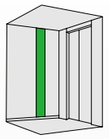
Flat button *1
(Plastic)

Notes:
*1: Please note that flat (non-tactile) buttons and buttons without color contrast cannot be used in countries where regulations such as EN81-70 mandate specific measures for physically disabled passengers.
*2: Flat buttons are also available, please consult our local agents for details.
*3: The number "5" has a small raised dot as tactile orientation of the keypad for visually-impaired passengers.

Actual colors may differ slightly from those shown.

Car Signal Fixtures

Car Operating Panel (For side wall)



CBE-N211
(Standard for 2 to 30 floors)

Tactile button
(Plastic)

CBF-N211

Flat button *1
(Plastic)

CBV-N211

Tactile button *1
(Stainless-steel matte)

CBJ-N211

Flat button *1
(Plastic)

CBE-N221
(LCD indicator)

Tactile button *2
(Plastic)

CBH-N211
(Standard for 31 or more floors)

Flat button *1
(Plastic)

CBVF-N225
Keypad type
(LCD indicator)

Number: Flat button *3
Star: Tactile button
(Stainless-steel matte)

CBE-N217
(With alarm indication for EN81-70) *4

Tactile button
(Plastic)

CBE-N218
(With alarm indication for EN81-70) *4

Tactile button
(Plastic)

CBV-N217
(With alarm indication for EN81-70) *4

Tactile button
(Stainless-steel matte)

CBV-N218
(With alarm indication for EN81-70) *4

Tactile button
(Stainless-steel matte)

CBVF-N226
(With alarm indication for EN81-70) *4

Keypad type
(LCD indicator)

Number: Flat button *3
Star: Tactile button
(Stainless-steel matte)

CBVF-N227
(With alarm indication for EN81-70) *4

Keypad type
(LCD indicator)

Number: Flat button *3
Star: Tactile button
(Stainless-steel matte)

Notes:
*1: Please note that flat (non-tactile) buttons and buttons without color contrasts cannot be used in countries where regulations such as EN81-70 mandate specific measures for physically disabled passengers.
*2: Flat buttons are also available, please consult our local agents for details.
*3: The number "5" has a small raised dot as tactile orientation of the keypad for visually-impaired passengers.
*4: Interphone which complies with EN81-28 is required.

Actual colors may differ slightly from those shown.

Hall Signal Fixtures

Hall Buttons

HBE-A210N Boxless
HBE-A210B
Tactile button *1
(Plastic)

HBE-C210N
Tactile button *1
(Plastic)

HBV-C210N
Tactile button *2
(Stainless steel matte)

HBE-C260N Boxless
Tactile button *1
(Plastic)

HBJ-C210N
Flat button *2
(Plastic)

HBV-C215N
Tactile button
(Stainless-steel matte)

HBN-C210N
Push and Flat button *2
(Plastic)

HBL-C210N
Flat button *2
(Plastic)

Hall Position Indicators and Call Buttons

PIE-A210N Boxless
(Standard)
PIE-A210B
Tactile button *1
(Plastic)

PIE-A220N Boxless
(Standard)
PIE-A220B
Tactile button *1
(Plastic)

PIE-C210N
Tactile button *1
(Plastic)

PIE-C220N
Tactile button *1
(Plastic)

PIV-C210N
Tactile button *2
(Stainless steel matte)

PIV-C220N
Tactile button *2
(Stainless steel matte)

PIJ-C210N
Flat button *2
(Plastic)

PIJ-C220N
Flat button *2
(Plastic)

Notes:
*1: Flat buttons are also available, please consult our local agents for details.
*2: Please note that flat (non-tactile) buttons and buttons without color contrast cannot be used in countries where regulations such as EN81-70 mandate specific measures for physically disabled passengers.

Hall Position Indicators

PIH-D410

PIH-D421 Boxless

PID-D410
(Built into transom panel)

No Entry Indicators

SN-C10
(For EN81-73)

SN-C20 Boxless
(For EN81-73)

Hall Button with No Entry Indicators

HBE-C211N
(For EN81-73)

HBV-C211N *2
(For EN81-73)

HBV-C216N
(For EN81-73)

HBE-C261N Boxless
(For EN81-73)

Hall Lanterns

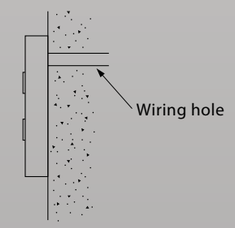
HLH-A15

HLV-A15

Cross-section of boxless fixtures

Boxless

These hall signal fixtures can be easily mounted on the wall surface without having to cut into the wall to embed the back box.

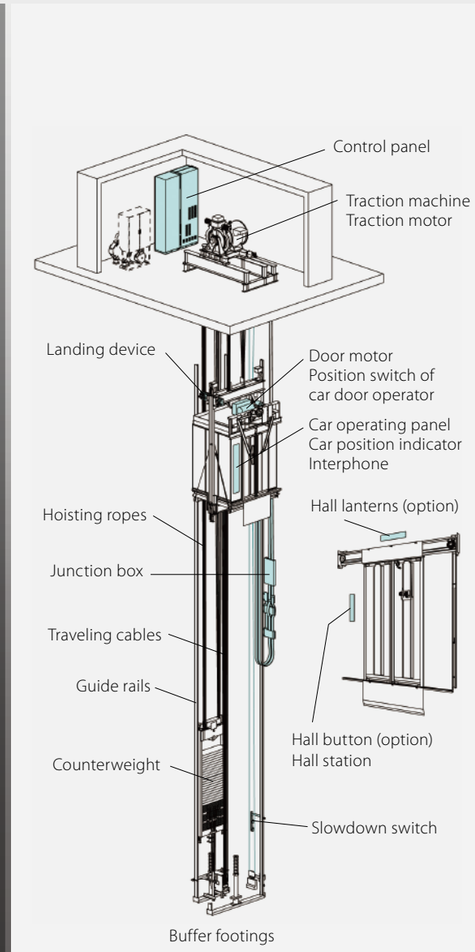


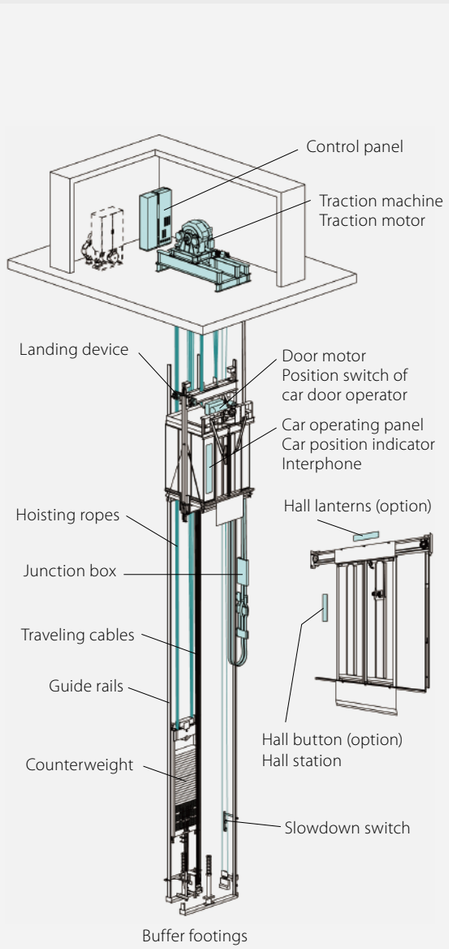
Actual colors may differ slightly from those shown.

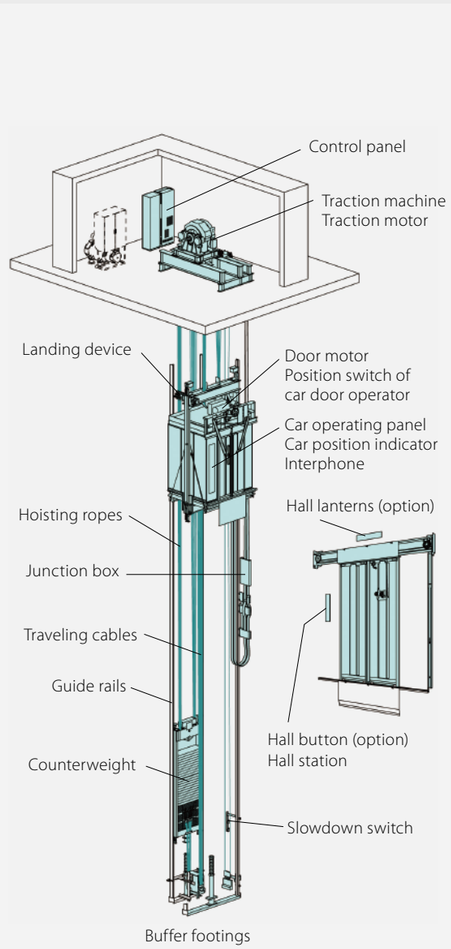
Plans

Control system modernization allows cost savings and minimizes downtime.
Utilizing existing elevator parts makes contributions to reducing of CO_2 emissions and greening activities.

Modernization Plans	CM0	CM2	SM
Replaced elements	Control panel, Signal fixtures, Door motor, etc.	Traction machine, Control panel, Signal fixtures, Door motor, Machine beams, etc.	Traction machine, Control panel, Signal fixtures, Car, Door operator (Car & Hall), etc.
Reused elements	Traction machine / Car sling / Car platform / Car interior / Car door / Landing door / Landing sills / Door frames / Guide rails / Counterweight / Buffer footings / Machine beams, etc.	Car sling / Car platform / Car interior / Car door / Landing doors / Landing sills / Door frames / Guide rails / Counterweight / Buffer footings, etc.	Landing sills / Door frames / Guide rails, etc.







Work Not Included in Elevator Contract

The following items are excluded from Mitsubishi Electric's elevator modernization work, and are therefore the responsibility of the building owner or general contractor.

Elevator Halls and Hoistways

1. Finishing of walls and floors of elevator halls after installation of elevator hall fitting.
2. Hoistway repair work.
3. Installing intermediate beams (where existing ones cannot be used).
4. Drilling holes for jambs and transom panels, hall indicators, hall buttons, etc. in the entrance halls on each floor (where existing ones cannot be used).
5. Installing steel backing plates for the jambs and transom panels, hall buttons, hall indicators, etc. in the entrance halls on each floor where steel-frame construction is used (when existing ones cannot be used).
6. Installing fasteners for the mounting of rail brackets on floors where steel-frame construction is used (where existing ones cannot be used).

Machine Rooms

1. Removing of machine-room floor (breaking up cinder concrete).
2. Laying conduits in the machine-room floor before laying and finishing cinder concrete.
3. Drilling holes in machine-room floor.
4. Providing a temporary opening to introduce machinery and restoration work.
5. Access to the elevator machine room sufficient to allow passage for transporting machinery from outside the building.

Temporary Installation Work

1. Disposing of removed parts, cleaning up and disposing of broken glass and scrap.
2. Providing a suitable, locked space for storage of removed or to-be-installed elevator parts and tools.
3. Supplying electric power for the work and lighting.

Installation Period Cautions

1. Security guards should be deployed throughout the installation period.

Cautions to Be Noted During the Installation Work

1. Providing temporary hall enclosures.
2. It should be remembered that a certain amount of vibration and noise is inevitable during the installation period.
3. It should be noted that flammable materials will be used during the installation period.

* Work responsibilities in installation and construction shall be determined according to the local laws. Please consult our local agents for details.

Features

Feature	Description	1C to 2C 2BC	3C to 4C ΣAI-22	3C to 8C ΣAI-2200C
■ OPERATIONAL AND SERVICE FEATURES				
High Accuracy Landing Feature (HARL)	The car landing level is adjusted to a high level of precision in order to ensure a landing accuracy of ±5mm under any conditions. (Not applicable to CM0.)	Ⓢ	Ⓢ	Ⓢ
Motor Drive Mix (MDX)	The rate of car acceleration and deceleration is automatically increased according to the car load to reduce passenger waiting and travel time.	—	Ⓞ[#1]	Ⓞ[#1]
Safe Landing (SFL)	If a car has stopped between floors due to some equipment malfunction, the controller checks the cause, and if it is considered safe to move the car, the car will move to the nearest floor at a low speed and the doors will open.	Ⓢ	Ⓢ	Ⓢ
Next Landing (NXL)	If the elevator doors do not open fully at a destination floor, the doors close, and the car automatically moves to the next or nearest floor where the doors will open.	Ⓢ	Ⓢ	Ⓢ
Continuity of Service (COS)	A car which is experiencing trouble is automatically withdrawn from group control operation to maintain overall group performance.	Ⓢ†	Ⓢ	Ⓢ
Automatic Bypass (ABP)	A fully-loaded car bypasses hall calls in order to maintain maximum operational efficiency. (Optional feature when 1-car 2BC system is applied.)	Ⓢ	Ⓢ	Ⓢ
Overload Holding Stop (OLH)	A buzzer sounds to alert the passengers that the car is overloaded. The doors remain open and the car will not leave that floor until enough passengers exit the car.	Ⓢ	Ⓢ	Ⓢ
Automatic Hall Call Registration (FSAT)	If one car cannot carry all waiting passengers because it is full, another car will automatically be assigned for the remaining passengers.	Ⓢ	Ⓢ	Ⓢ
Car Call Canceling (CCC)	When a car has responded to the final car call in one direction, the system regards remaining calls in the other direction as mistakes and clears them from the memory.	Ⓢ	Ⓢ	Ⓢ
Car Fan Shut Off — Automatic (CFO-A)	If there are no calls for a specified period, the car ventilation fan will automatically turn off to conserve energy.	Ⓢ	Ⓢ	Ⓢ
Car Light Shut Off — Automatic (CLO-A)	If there are no calls for a specified period, the car lighting will automatically turn off to conserve energy.	Ⓢ	Ⓢ	Ⓢ
Backup Operation for Group Control Microprocessor (GCBK)	An operation by car controllers which automatically maintains elevator operation in the event that a microprocessor or transmission line in the group controller has failed.	Ⓢ†	Ⓢ	Ⓢ
False Call Canceling — Automatic (FCC-A)	If the number of registered car calls does not correspond to the car load, all calls are canceled to avoid unnecessary stops.	Ⓢ	Ⓢ	Ⓢ
False Call Canceling — Car Button Type (FCC-P)	If the wrong car button is pressed, it can be canceled by quickly pressing the same button again twice.	Ⓢ	Ⓢ	Ⓢ
Out-of-Service — Remote (RCS)	With a key switch on the supervisory panel, etc., a car can be called to a specified floor after responding to all car calls, and then automatically be taken out of service.	Ⓞ	Ⓞ	Ⓞ
Secret Call Service (SCS-B)	To enhance security, car calls for desired floors can be registered only by entering secret codes using the car buttons on the car operating panel. This function is automatically deactivated during emergency operation.	Ⓞ	Ⓞ	Ⓞ
Non-Service to Specific Floors — Car Button Type (NS-CB)	To enhance security, service to specific floors can be disabled using the car operating panel. This function is automatically deactivated during emergency operation.	Ⓞ	Ⓞ	Ⓞ
Non-Service to Specific Floors — Switch/Timer Type (NS/NS-T)	To enhance security, service to specific floors can be disabled using a manual or timer switch. This function is automatically deactivated during emergency operation.	Ⓞ	Ⓞ	Ⓞ
Out-of-Service by Hall Key Switch (HOS/HOS-T)	For maintenance or energy-saving measures, a car can be taken out of service temporarily with a key switch (with or without a timer) mounted in a specified hall.	Ⓞ	Ⓞ	Ⓞ
Return Operation (RET)	Using a key switch on the supervisory panel, a car can be withdrawn from group control operation and called to a specified floor. The car will park on that floor with the doors open, and not accept any calls until independent operations begin.	Ⓞ	Ⓞ	Ⓞ
Attendant Service (AS)	Exclusive operation where an elevator can be operated using the buttons and switches located in the car operating panel, allowing smooth boarding of passengers or loading of baggage.	Ⓞ	Ⓞ	Ⓞ
Independent Service (IND)	Exclusive operation where a car is withdrawn from group control operation for independent use, such as maintenance or repair, and responds only to car calls.	Ⓢ	Ⓢ	Ⓢ
■ GROUP CONTROL FEATURES				
Expert System and Fuzzy Logic	Artificial expert knowledge, which has been programmed using “expert system” and “fuzzy logic”, is applied to select the ideal operational rule which maximizes the efficiency of group control operations.	—	Ⓢ	Ⓢ
Psychological Waiting Time Evaluation	Cars are allocated according to the predicted psychological waiting time for each hall call. The rules evaluating psychological waiting time are automatically changed in a timely manner in response to actual service conditions.	—	Ⓢ	Ⓢ
Cooperative Optimization Assignment	The system predicts a potential hall call, which could cause longer waiting time. Car assignment is performed considering not only current and new calls but also near-future calls.	—	—	Ⓢ

Feature	Description	1C to 2C 2BC	3C to 4C ΣAI-22	3C to 8C ΣAI-2200C
Car Travel Time Evaluation	Cars are allocated to hall calls by considering the number of car calls that will reduce passenger waiting time in each hall and the travel time of each car.	—	Ⓢ	Ⓢ
Distinction of Traffic Flow with Neural Networks (NN)	Traffic flows in a building are constantly monitored using neural network technology, and the optimum operational pattern, such as Lunchtime Service or Up Peak Service, is selected or canceled accordingly at the appropriate time.	—	—	Ⓢ
Car Allocation Tuning (CAT)	The number of cars allocated or parked on crowded floors are controlled not just according to the conditions on those crowded floors but also the operational status of each car and the traffic on each floor.	—	—	Ⓢ
Dynamic Rule-Set Optimizer (DRO)	Traffic flows in a building are constantly predicted using neural network technology, and an optimum rule-set for group control operations is selected through real-time simulations based on prediction results.	—	—	Ⓢ
Destination Oriented Allocation System (DOAS)	When a passenger enters a destination floor at a hall, the hall operating panel indicates which car will serve the floor. The passenger does not need to press a button in the car. Dispersing passengers by destination prevents congestion in the cars and minimizes waiting and traveling time. (Cannot be combined with the IUP feature.)	—	—	Ⓞ[#2]
Peak Traffic Control (PTC)	A floor which temporarily has the heaviest traffic is served with higher priority over other floors, but not to the extent that it interferes with the service to other floors.	—	Ⓢ	Ⓢ
Strategic Overall Spotting (SOHS)	To reduce passenger waiting time, cars which have finished service are automatically directed to positions where they can respond to predicted hall calls as quickly as possible.	Ⓢ†	Ⓢ	Ⓢ
Intense Up Peak (IUP)	To maximize transport efficiency, an elevator bank will be divided into two groups of cars to serve upper and lower floors separately during up peak. In addition, the number of cars to be allocated, the timing of car allocation to the lobby floor, the timing of door closing, etc. are controlled based on predicted traffic data.	—	—	Ⓞ
Up Peak Service (UPS)	Controls the number of cars to be allocated to the lobby floor, as well as the car allocation timing, in order to meet increased demands for upward travel from the lobby floor during office starting time, hotel check-in time, etc. and minimize passenger waiting time.	—	Ⓞ	Ⓞ
Down Peak Service (DPS)	Controls the number of cars to be allocated and the timing of car allocation in order to meet increased demands for downward travel during office leaving time, hotel check-out time, etc., to minimize passenger waiting time.	—	Ⓞ	Ⓞ
Forced Floor Stop (FFS)	All cars in a bank automatically make a stop at a predetermined floor on every trip without being called.	Ⓞ	Ⓞ	Ⓞ
Main Floor Parking (MFP)	An available car always parks on the main (lobby) floor with the doors open to reduce passenger waiting time.	Ⓞ	Ⓞ	Ⓞ
Energy-Saving Operation — Power Reduction during Off-Peak (ESO-A)	To save energy, some elevators are automatically put into sleep mode if there are no calls for a specified period. (Not applicable to CM0.)	—	Ⓞ[#1]	Ⓢ[#1]
Energy-Saving Operation — Speed Control (ESO-V)	To save energy, the car speed is automatically reduced to some extent, but not so much that it adversely affects passenger waiting time.	—	Ⓞ[#1]	Ⓞ
Energy-Saving Operation — Allocation Control (ESO-W)	The system selects the elevator that best balances operational efficiency and energy consumption according to each elevator’s current location and passenger load as well as predicted congestion levels throughout the day.	—	—	Ⓢ
Special Floor Priority Service (SFPS)	Special floors, such as floors with VIP rooms or executive rooms, are given higher priority for car allocation when a call is made on those floors. (Cannot be combined with hall position indicators.)	—	Ⓞ[#1]	Ⓞ
Closest-Car Priority Service (CNPS)	A function to give priority allocation to the car closest to the floor where a hall call button has been pressed, or to reverse the closing doors of the car closest to the pressed hall call button on that floor. (Cannot be combined with hall position indicators.)	—	Ⓞ[#1]	Ⓞ
Light-Load Car Priority Service (UCPS)	When traffic is light, empty or lightly-loaded cars are given higher priority to respond to hall calls in order to minimize passenger travel time. (Cannot be combined with hall position indicators.)	—	Ⓞ[#1]	Ⓞ
Special Car Priority Service (SCPS)	Special cars, such as observation elevators and elevators with basement service, are given higher priority to respond to hall calls. (Cannot be combined with hall position indicators.)	—	Ⓞ[#1]	Ⓞ
Congested-Floor Service (CFS)	The timing of car allocation and the number of cars to be allocated to floors where meeting rooms or ballrooms exist and the traffic intensifies for short periods of time, are controlled according to the detected traffic density data for those floors.	—	Ⓞ[#1]	Ⓞ
Bank-Separation Operation (BSO)	Hall buttons and the cars called by each button can be divided into several groups for independent group control operation to serve special needs or different floors.	—	Ⓞ	Ⓞ
VIP Operation (VIP-S)	A specified car is withdrawn from group control operation for VIP service operation. When activated, the car responds only to existing car calls, moves to a specified floor and parks there with the doors open. The car will then respond only to car calls.	—	Ⓞ	Ⓞ
Lunchtime Service (LTS)	During the first half of lunchtime, calls for a restaurant floor are served with higher priority, and during the latter half, the number of cars allocated to the restaurant floor, the allocation timing for each car and the door opening and closing timing are all controlled based on predicted data.	—	Ⓞ	Ⓞ
Main Floor Changeover Operation (TFS)	This feature is effective for buildings with two main (lobby) floors. The floor designated as the “Main floor” in a group control operation can be changed as necessary using a manual switch.	Ⓞ	Ⓞ	Ⓞ

Features

Feature	Description	1C to 2C 2BC	3C to 4C ΣAI-22	3C to 8C ΣAI-2200C
■ DOOR OPERATION FEATURES				
Door Sensor Self-Diagnosis (DODA)	Failure of non-contact door sensors is checked automatically, and if a problem is diagnosed, the door-close timing is delayed and the closing speed is reduced to maintain elevator service and ensure passenger safety.	Ⓢ	Ⓢ	Ⓢ
Automatic Door Speed Control (DSAC)	Door load on each floor, which can depend on the type of hall door, is monitored to adjust the door speed, thereby making the door speed consistent throughout all floors. (Cannot be used with some doors.)	Ⓢ	Ⓢ	Ⓢ
Reopen with Hall Button (ROHB)	Closing doors can be reopened by pressing the hall button corresponding to the traveling direction of the car.	Ⓢ	Ⓢ	Ⓢ
Repeated Door-Close (RDC)	Should an obstacle prevent the doors from closing, the doors will repeatedly open and close until the obstacle is cleared from the doorway.	Ⓢ	Ⓢ	Ⓢ
Extended Door-Open Button (DKO-TB)	When the button inside a car is pressed, the doors will remain open longer to allow loading and unloading of a baggage, stretcher, etc.	Ⓞ	Ⓞ	—
Door Nudging Feature — With Buzzer (NDG)	A buzzer sounds and the doors slowly close when they have remained open for longer than the preset period. With AAN-B or AAN-G, a beep and voice guidance sound instead of the buzzer.	Ⓢ	Ⓢ	Ⓢ
Door Load Detector (DLD)	When excessive door load has been detected while opening or closing, the doors immediately reverse.	Ⓢ	Ⓢ	Ⓢ
Safety Door Edge (SDE)	One Side (2S & 3S Doors) / Both Sides (CO & 2CO Doors) — Sensitive door edge(s) detects passengers or objects during door closing.	Ⓢ	Ⓢ	Ⓢ
Safety Ray (SR)	One or two infrared-light beams cover the full width of the doors as they close to detect passengers or objects. (Cannot be combined with multi-beam door sensor.)	Ⓞ	Ⓞ	Ⓞ#2
Electronic Doorman (EDM)	Door open time is minimized using safety ray(s) or multi-beam door sensors that detect passengers boarding or exiting.	Ⓞ	Ⓞ	Ⓞ
Multi-Beam Door Sensor	Multiple infrared-light beams cover a door height of approximately 1800mm to detect passengers or objects as the doors close. (Cannot be combined with the SR feature.)	Ⓞ	Ⓞ	Ⓞ#2
Hall Motion Sensor (HMS)	Infrared-light is used to scan a 3D area near the open doors to detect passengers or objects.	Ⓞ#1	Ⓞ#1	Ⓞ#1
3D Multi-Beam Door Sensor	Multiple infrared-light beams cover a door height of approximately 1800mm to detect passengers or objects as the doors close. The 3D sensor can also monitor the hall by expanding multiple infrared-light beams. (Cannot be combined with the SR feature.)	Ⓞ	Ⓞ	Ⓞ
■ SIGNAL AND DISPLAY FEATURES				
Sonic Car Button — Click Type (ACB)	A click-type car button which emits electronic beep sounds when pressed to indicate that the call has been registered.	Ⓞ	Ⓞ	Ⓞ
Car Arrival Chime — Car or Hall (AECC/AECH)	Electronic chimes sound to indicate that a car will soon arrive. (The chimes are mounted either on the top and bottom of the car, or in each hall.)	Ⓞ	Ⓞ	Ⓢ (each floor)
Flashing Hall Lantern (FHL)	A hall lantern, which corresponds to a car's service direction, flashes to indicate that the car will soon arrive.	Ⓞ	Ⓞ	Ⓢ
In-car LCD Position Indicator (CID-S)	This 5.7-inch LCD for car operating panels shows the date and time, car position, travel direction and elevator status messages.	Ⓞ	Ⓞ	Ⓞ
Car Information Display (CID)	This LCD (10.4- or 15-inch) for car front return panels shows the date and time, car position, travel direction and elevator status messages. In addition, customized video images can be displayed in full-screen or partial-screen formats.	Ⓞ#1	Ⓞ#1	Ⓞ#1
Hall Information Display (HID)	This LCD (10.4- or 15-inch) for elevator halls shows the date and time, car position, travel direction and elevator status messages. In addition, customized video images can be displayed in full-screen or partial-screen formats.	Ⓞ#1	Ⓞ#1	Ⓞ#1
Immediate Prediction Indication (AIL)	When a passenger has registered a hall call, the best car to respond to that call is immediately selected, the corresponding hall lantern lights up and a chime sounds once to indicate which doors will open.	—	—	Ⓞ
Second Car Prediction (TCP)	When a hall is crowded to the extent that one car cannot accommodate all waiting passengers, the hall lantern will light up to indicate the next car to serve the hall.	—	—	Ⓞ
Basic Announcement (AAN-B)	A synthetic voice (and/or buzzer) alerts passengers inside a car that elevator operation has been temporarily interrupted by overloading or a similar cause. (Voice available only in English.)	Ⓢ	Ⓢ	Ⓢ
Voice Guidance System (AAN-G)	Information on elevator service such as the current floor or service direction is given to the passengers inside a car. (Voice guidance available only in English.)	Ⓞ	Ⓞ	Ⓞ
Auxiliary Car Operating Panel (ACS)	An additional car control panel which can be installed for large-capacity elevators, heavy-traffic elevators, etc.	Ⓞ	Ⓞ	Ⓞ
Inter-communication System (ITP)	A system which allows communication between passengers inside a car and the building personnel.	Ⓞ	Ⓞ	Ⓞ

Feature	Description	1C to 2C 2BC	3C to 4C ΣAI-22	3C to 8C ΣAI-2200C
■ EMERGENCY OPERATIONS AND FEATURES				
Mitsubishi Emergency Landing Device (MELD)	Upon power failure, a car equipped with this function automatically moves and stops at the nearest floor using a rechargeable battery, and the doors open to facilitate the safe evacuation of passengers. (Maximum allowable floor-to-floor distance is 11 meters.) (For CM0, MELD is applicable to the following specifications. Rated capacity: 1600kg or less, rated speed: 120m/min to 240m/min.)	Ⓞ	Ⓞ	Ⓞ
Operation by Emergency Power Source — Automatic/Manual (OEPS)	Upon power failure, predetermined car(s) uses the building's emergency power supply to move to a specified floor, where the doors then open to facilitate the safe evacuation of passengers. After all cars have arrived, predetermined car(s) will resume normal operation.	Ⓞ	Ⓞ	Ⓞ
Fire Emergency Return (FER)	Upon activation of a key switch or a building's fire sensors, all calls are canceled, all cars immediately return to a specified evacuation floor and the doors open to facilitate the safe evacuation of passengers.	Ⓞ	Ⓞ	Ⓞ
Firefighters' Emergency Operation (FE)	During a fire, when the fire operation switch is activated, the car calls of a specified car and all hall calls are canceled and the car immediately returns to a predetermined floor. The car then responds only to car calls which facilitate fire-fighting and rescue operations.	Ⓞ	Ⓞ	Ⓞ
Earthquake Emergency Return (EER-P/EER-S)	Upon activation of primary and/or secondary wave seismic sensors, all cars stop at the nearest floor, and park there with the doors open to facilitate the safe evacuation of passengers.	Ⓞ	Ⓞ	Ⓞ
Supervisory Panel (WP)	Each elevator's status and operation can be remotely monitored and controlled through a panel installed in a building's supervisory room, etc.	Ⓞ	Ⓞ	Ⓞ
MelEye (WP-W) Mitsubishi Elevators & Escalators Monitoring and Control System	Each elevator's status and operation can be monitored and controlled using an advanced Web-based technology which provides an interface through personal computers. Special optional features such as preparation of traffic statistics and analysis are also available.	Ⓞ	Ⓞ	Ⓞ
Emergency Car Lightning (ECL)	Car lighting which turns on immediately when power fails, providing a minimum level of lighting within the car. (Choice of dry-cell battery or trickle-charge battery.)	Ⓞ	Ⓞ	Ⓞ

Notes: 1C-2BC (1-car selective collective) – Standard, 2C-2BC (2-car selective collective) – Optional
ΣAI-22 (3 to 4-car group control system) – Optional, ΣAI-2200C (3 to 8-car group control system) – Optional
Ⓢ = Standard Ⓞ = Optional † = Not applicable to 1-car 2BC system — = Not applicable
#1 = Please consult our local agents for the production terms, etc.
#2 = When DOAS is applied, SR or Multi-Beam Door Sensor should be installed.

ISO 9001 BUREAU VERITAS Certification

ISO 14001 JACO EC98J2017 — UKAS ENVIRONMENTAL MANAGEMENT 051

Mitsubishi Elevator Inazawa Works has acquired ISO 9001 certification by the International Organization for Standardization based on a review of quality management.
The company has also acquired environmental management system standard ISO 14001 certification.

for a greener tomorrow

Eco Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.

MITSUBISHI ELECTRIC CORPORATION
HEAD OFFICE : TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN

Visit our website at:
http://www.mitsubishielectric.com/elevator/

⚠ **Safety Tips:** Be sure to read the instruction manual fully before using this product.

Revised publication, effective Dec. 2014.
Superseding publication of C-C01-9-C8380-C Sep. 2012.
Specifications are subject to change without notice.

©2014 Mitsubishi Electric Corporation

C-C01-9-C8380-D INA-1412 Printed in Japan (IP)